

# OPP: SUSTAINABILITY & CRISIS

## Combining sustainability with gerontechnology: A holistic approach to optimizing aging

A. Ternès von Hattburg

**Purpose** AI is one of the technologies in gerontechnology that can optimize and even revolutionize applications, processes, and analytical methods. We have been working in the area of AI for some years already and currently developing an AI-based software for a virtual self-learning system aimed at holistic healthy aging. Our focus is on strengthening self-healing powers, intuition, the five senses, and self-awareness, which can also serve as early detection. This approach promotes resource-oriented, sustainable and regenerative self-care, and finds a connection between sustainability and technologies such as AI to optimally support one's own health. Over the past months, we have started to develop and build an AI database that includes both many general scientific results in the form of texts, audio and videos, as well as health and lifestyle data from current own and foreign surveys. We have been collecting and analyzing concrete health data and lifestyle information from the first participants of our program since April 2024 to create individually oriented learning, knowledge, and application offerings in the areas of: 1. Mental health, 2. Nutrition, 3. Exercise, and 4. Lifestyle (sleep, communication, social environment and relationships, work and work habits, etc.). These offerings are provided based on AI-driven recommendation systems and our own media. In addition to informative media products, we offer tests, both individual and group tasks and challenges, that bring participants into virtual contact through interactivity. We have developed questionnaires that motivate participants to playfully enter their results on the four aforementioned topics. There is an initial questionnaire followed by shorter questionnaires that need to be filled out regularly to better determine developments and use them for software development. Currently, we are continuing to work on determining the status of participants as accurately as possible and preparing individual development paths using AI, enabling them to proceed at a suitable pace and take the next steps in terms of content, didactics, and methodology. The program is accompanied by motivational communication, such as via individual oriented bots. Our offering allows people, regardless of their location, current physical condition, and time constraints, to optimize their health holistically, independently or alongside medical applications, alone or interactively, with AI-supported, individually tailored offerings. **Method** In the first phase, we examined the problem – which target group is affected by the inability to independently optimize their health as barrier-free as possible. We then developed the personas for our offering. We investigated whether the demand was sufficiently high to justify developing an offer that also considers the needs of AI. We then examined existing offers to determine whether they meet the needs of the target groups and which offers or offer components are missing in the market segment we identified. Based on the needs of the target group for a product that supports self-optimization of health, we defined the didactic, and methodological parameters, i.e., the type, content, thematic depth, and communication formats needed for optimal effectiveness and suitability. We determined the methods required to optimally motivate, learn, understand, and implement. We then defined the USPs, KPIs/OKRs, and the structure of the learning paths. The final phase before publication and public availability is currently underway. For this, 25 real participants took part in the program as focus test subjects. They cover the previously defined personas and began with the initial questionnaire 1st of July, followed by their individually developed paths, providing comments and suggestions for improvement. This process was and continues to be monitored, tracked, analyzed, and evaluated to continuously optimize the program and the software behind it. (Figure 1). **Results and Discussion** We have developed an AI-supported software and built a learning system on it that sustainably supports health and healing processes in an age- and situation-oriented manner. The 25 test persons aged 60 started over July 1st. Our initial results show that with the help of the AI-supported, self-implemented learning system, there was a significant optimization of health parameters within one month for 23 out of 25 participants, and a noticeable optimization for 2 out of 25. We are currently increasing the number of participants in further tests and developing the AI-supported analysis and communication offerings, developing new methods to 1. optimize the data basis for AI and 2. strengthen the self-responsibility and motivation of participants, using AI and methods for interaction with participants, benchmarking with their own and results of other participants, information exchange among them and optimizing the analysis and tracking system with a focus on the long-term optimization of individual health.

### References

- Brown, A. & Johnson, B. (2023). Leveraging AI for Sustainable Elderly Care: Opportunities and Challenges. International Conference on Aging and Technology Proceedings, 45-56.
- Smith, J. et al. (2022). Sustainable Aging: Integrating Technology and Gerontology. Journal of Gerontechnology, 10(3), 123-135.
- Ternès von Hattburg, A. (2019): Orientierungsmodelle und Digitalisierung. Kommunikationsprozesse im Wandel. München: De Gruyter Oldenbourg.
- Ternès, A., Schmidt, A. (2023): Human Sustainability Management. In: People Sustainability. Hrsg. Kilian, G., Gutmann, J. Freiburg: Haufe, S. 13 – 28.

**Keywords:** sustainable aging, AI Integration, services architecture, machine learning techniques

**Affiliation:** School of Economics, International Management University SRH Berlin, Germany

**Email:** [anabel.ternes@srfh.de](mailto:anabel.ternes@srfh.de)

**Acknowledgement:** This research was supported by House of Future + Green, Cyberinnovations

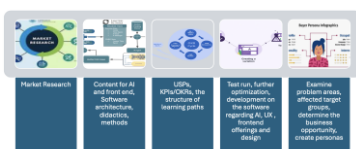


Figure 1. Overview of the method